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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,336	02/28/2002	Dieter Kerner	39509-177800	5608
26694	7590	12/17/2003	EXAMINER	
VENABLE, BAETJER, HOWARD AND CIVILETTI, LLP P.O. BOX 34385 WASHINGTON, DC 20043-9998			ROBERTSON, JEFFREY	
			ART UNIT	PAPER NUMBER
			1712	

DATE MAILED: 12/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

### Application No.

10/084,336

### Applicant(s)

KERNER ET AL.

### Examiner

Jeffrey B. Robertson

### Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☒ Claim(s) 3,8 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1103.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Objections*

1. Claims 3, 8, and 9 are objected to because of the following informalities: For claim 3, In the definition of the R' groups, the "c" in  $-\text{OOC}(\text{CH}_3)\text{c}=\text{CH}_2$  should be capitalized. In i), the "-" before ethyl should be either deleted or moved between "methyl" and the comma to avoid any confusion that the ethyl group is divalent. For claim 8, the word "type" before D4 should be deleted. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3, 8, and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For claim 3, under d) and e), why are there two definitions of R'? The purpose of these definitions are unclear.

Also under f), g), h), i), and (j), x is not defined in the group  $-\text{S}_x-(\text{CH}_2)_3\text{Si}(\text{OR})_3$ .

In (l), applicant sets forth cyclic siloxanes D3, D4, or D5, however the formula shown corresponds only to a D4 cyclic siloxane. The definitions of "D3" and "D5" are not set forth in the claim.

Under m), why are there two different definitions of Y in the claim? Are the silyl groups below the formula meant to be included in the definition of Y?

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deller et al. (U.S. Patent No. 5,776,240) in view of Mangold et al. (CA 2,223,377).

For claims 1-3, in column 1, line 48, through column 2, line 5, Deller teaches that pyrogenically prepared silicon dioxide is silanized with alkoxy silanes, silazanes, and or siloxanes. For claims 3, 8, and 9, Deller teaches in column 4, lines 15-28, that octamethylcyclotetrasiloxane is used as the siloxane for silanizing the silicon dioxide. For claims 4, 6, and 7, Deller teaches in column 10, lines 28-35, that the granules are sprayed with water prior to being treated with silanizing agent, treated with the silanizing agent, allowed to mix for 15 to 30 more minutes, and then heated for 1 to 4 hours at 100 to 400°C. Deller fails to teach that the pyrogenically produced oxides are doped by aerosol.

Mangold teaches pyrogenically produced oxides that are doped, including silicon dioxide on page 3, lines 18-22. On page 2, lines 5-22, Mangold teaches that the oxides are doped by aerosol.

Mangold and Deller are analogous art in that they come from the same field of endeavor, namely the use of pyrogenically prepared oxides as catalyst supports. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the oxides in the treatment process of Deller. The motivation would have been that Mangold states that the doped pyrogenically prepared oxides have advantages over the non-doped oxides on page 15, lines 8-16. These advantages are in the form of larger cohesive structures, increased sediment volume, and a greatly increased efficiency value. One of ordinary skill in the art would have been motivated by the improvement in these properties in using the doped oxides of Mangold.

6. Claims 1-3, 5, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laüfer et al. (U.S. Patent No. 4,022,152) in view of Mangold et al. (CA 2,223,377).

For claims 1-3, 5, 8, and 9, in column 8, lines 57-61, Laüfer teaches a pyrogenic silicic acid ( $\text{SiO}_2$ ) is treated with octamethyltetrasiloxane. For claim 5, in column 3, lines 59-68, Laüfer discloses that the fillers produced are used in silicone rubbers for a greater thickening effect. Laüfer fails to teach that the pyrogenic silica is doped by aerosol.

Mangold teaches pyrogenically produced oxides that are doped, including silicon dioxide on page 3, lines 18-22. On page 2, lines 5-22, Mangold teaches that the oxides are doped by aerosol.

Mangold and Laüfer are analogous art in that they come from the same field of endeavor, namely the use of pyrogenically prepared oxides as fillers. It would have

been obvious to one of ordinary skill in the art at the time of the invention to use the oxides in the treatment process of Laüfer. The motivation would have been that Mangold states that the doped pyrogenically prepared oxides have advantages over the non-doped oxides on page 15, lines 8-20 including an increase in thickening effect. One of ordinary skill in the art would have been motivated by the improvement in thickening effect in substituting the doped oxides of Mangold for the oxides used in Laüfer.

#### ***Response to Arguments***

7. Applicant's arguments filed 9/30/03 have been fully considered but they are not persuasive. Regarding the range for "x" in  $S_x$ , applicant states that the range is believed to be 1-10. Applicant also states that it is clear from the specification that "one or more" S atoms are intended and that the use of conventional agents of this type are envisioned. However, the examiner is unable to find support for these assertions in the specification. The rejection under 35 U.S.C. § 112, 2<sup>nd</sup> paragraph is continued.

Regarding applicant's comments on the rejection under 35 U.S.C. § 103(a) over Deller et al. in view of Mangold et al., the examiner disagrees. Applicant first argues that the examiner has relied on hindsight to combine the references. In response, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's

disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicant argues that there is no common problem for which one reference teaches a solution. The examiner disagrees. Both references are directed to solving prior art problems in oxides that are used as catalyst supports. More specifically both references teach the agglomeration of particles. The common problem is the formation of agglomerated particles with sufficiently large structures to be used as catalytic supports. Mangold states that the doped pyrogenically prepared oxides have advantages over the non-doped oxides on page 15, lines 8-16. These advantages are in the form of larger cohesive structures, increased sediment volume, and a greatly increased efficiency value. It is these properties that would enhance the metal oxides produced by Deller. Although the references individually do not mention a combination of treatments with doping, on page 15, lines 8-10, Mangold teaches that agglomerate structures are modified with doping to produce larger cohesive structures. Since the surface-treated metal oxides are also agglomerated, there is a reasonable expectation of success that the surface-treatment of the particles of Mangold as set forth in Deller would be effective without destroying the cohesive structures produced in Mangold. Therefore the rejection under 35 U.S.C. § 103(a) over Deller et al. in view of Mangold et al. is continued.

Regarding applicant's comments on the rejection under 35 U.S.C. § 103(a) over Läufer et al. in view of Mangold et al., the examiner disagrees. Applicant first argues that the examiner has relied on hindsight to combine the references. In response, it

must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicant argues that there is no taught problem in Laüfer et al. for which doping appears to be a solution. However, Mangold teaches that doping of silica produces a clear improvement in thickening effect. This is a problem for which doping is a solution, i.e. lack of thickening effect. In addition, applicant states that solutions of metal salts are used for the doping process in Mangold, which appears to be inconsistent with the "absolute drying conditions" and continuous process of Laüfer. The examiner disagrees. The continuous process appears to be to the extent of drying the silica particles and performing the surface treatment. In other words, the particles are provided in a suitable form prior to the drying step. The doped particles of Mangold would be introduced after doping for drying and subsequent surface treatment and any solution remaining would be removed during this drying step. Therefore, the rejection under 35 U.S.C. § 103(a) over Laüfer et al. in view of Mangold et al. is continued.

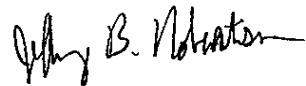


***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey B. Robertson whose telephone number is (571) 272-1092. The examiner can normally be reached on Mon-Fri 7:00-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (703) 306-2777. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Jeffrey B. Robertson  
Examiner  
Art Unit 1712

JBR